

## Derwent Record

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Derwent Title: **Catalytic reduction of nitrogen oxides with urea in engine exhaust gas containing oxygen - uses vaporizer with hydrolysis catalyst coating that also catalyses reduction before or instead of reduction catalyst to increase effective temperature range and thermal stability**

Original Title: ☒ DE19734627C1: Vorrichtung und Verfahren zur katalytischen NO<sub>x</sub>-Reduktion in sauerstoffhaltigen Motorabgasen

Assignee: **MAN NUTZFAHRZEUGE AG** Standard company  
Other publications from MAN NUTZFAHRZEUGE AG (MAUG)...

Inventor: **EBERHARD J; JACOB E;**

Accession/Update: **1999-061758 / 200025**

IPC Code: **B01D 53/94 ; F01N 3/08 ; B01D 53/86 ; B01D 53/90 ; C01C 1/08 ; F01N 3/10 ; F01N 3/20 ; F01N 3/24 ; F01N 3/28 ;**

Derwent Classes: **E36; H06; J04; Q51;**

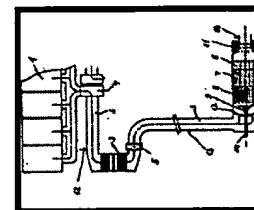
Manual Codes: **E10-A13B2**((Iso)urea, use) , **E11-Q02**(Removal, effluent treatment - processes, apparatus) , **E31-H01**(Removal of nitrogen oxides from waste gases etc. catalytically) , **E31-P02B**(Zeolite use) , **E31-P02D**(Non-zeolite use) , **H06-C03B** (Gaseous and liquid fuels - reduction of N oxides pollution control) , **J01-E02D**(Treating waste gases by catalytic methods) , **J04-E04**(Catalysts) , **N01-C02**(Alumina catalyst) , **N01-D02**(Silica, silicates catalyst) , **N03**(Other metal - element, (hydr)oxide, inorganic salt, carboxylate catalyst [general]) , **N06-B**(Other zeolite [general])

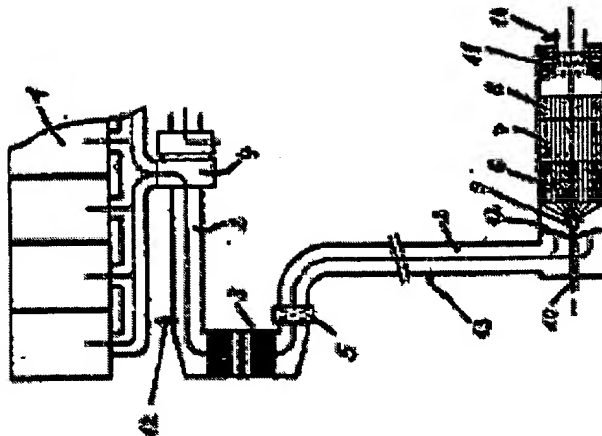
Derwent Abstract: ( DE19734627C) Catalytic reduction of nitrogen oxides (NO<sub>x</sub>) in engine exhaust gases containing oxygen (O<sub>2</sub>), using urea as reducing agent, uses a coating on the vaporizer (6) to give it significant NO<sub>x</sub> reduction activity, so that it reduces the load on the subsequent reduction catalyst or completely replaces this and reduces NO<sub>x</sub> at 150-650 deg. C. Also claimed is apparatus with a coated vaporizer giving this result.

**Use** - The system is useful e.g. with diesel engines.

**Advantage** - The system is smaller and/or its components are arranged better than in an existing system using urea as reducing agent. The temperature range for NO<sub>x</sub> conversion is increased from 250-550 deg. C to 150-650 deg. C and the thermal stability of the catalyst system is higher.

Images:





Dwg. 1/3

Family:

PDF Patent	Pub. Date	Derwent Update	Pages	Language	IPC Code
<input checked="" type="checkbox"/> DE19734627C1 *	1999-01-14	199906	11	German	B01D 53/94
Local appls.: DE1997001034627 Filed:1997-08-09 (97DE-1034627)					
<input checked="" type="checkbox"/> JP03037661B2 =	2000-04-24	200025	7	English	F01N 3/08
Local appls.: Previous Publ. JP11125110 (JP 11125110) JP1998000221606 Filed:1998-08-05 (98JP-0221606)					
<input checked="" type="checkbox"/> JP11125110A =	1999-05-11	199929	9	English	F01N 3/08
Local appls.: JP1998000221606 Filed:1998-08-05 (98JP-0221606)					
<input checked="" type="checkbox"/> EP0896831A1 =	1999-02-17	199912	14	German	B01D 53/94
Des. States: (R) AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
Local appls.: EP1998000111235 Filed:1998-06-18 (98EP-0111235)					

INPADOC  
Legal Status:

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First Claim:  
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1. Vorrichtung zur katalytischen NO<sub>x</sub>-Reduktion in sauerstoffhaltigen Motorabgasen unter Anwendung von Harnstoff als Reduktionsmittel, mit einem in der Abgasführung enthaltenen Reduktionskatalysator (7) und einem bekannten Verdampfer (6), der als Strömungsmischer und Hydrolysekatalysator ausgebildet ist und in dem Harnstoff zu Ammoniak (NH<sub>3</sub>) und (CO<sub>2</sub>) hydrolysiert wird, wobei die Oberfläche des Verdampfers (6) mit einer Abmischung aus Titandioxid TiO<sub>2</sub>, Aluminiumoxid Al<sub>2</sub>O<sub>3</sub>, Siliciumoxid SiO<sub>2</sub>, Zirkondioxid ZrO<sub>2</sub>, Diniobpentoxid Nb<sub>2</sub>O<sub>5</sub>, Ditantalpentoxid Ta<sub>2</sub>O<sub>5</sub>, Wolframtrioxid WO<sub>3</sub> und/oder H-Zeolithe beschichtet ist, **dadurch gekennzeichnet**, daß dem Verdampfer (6) zusätzlich zur Strömungsmischung und katalytischen Hydrolyseaktivität, eine signifikante NO<sub>x</sub>-Reduktionsaktivität aufgeprägt ist, um damit den nachgeschalteten Reduktionskatalysator (7) zu entlasten oder vollständig zu ersetzen und einen Arbeitstemperaturbereich der NO<sub>x</sub>-Reduktion von 150–650°C zu schaffen.

Priority Number:

Application Number	Filed	Original Title
DE1997001034627	1997-08-09	

Chemical  
Indexing Codes:

Show chemical indexing codes

Markush  
Compound  
Numbers:

Show Markush numbers

Specific

Show specific compounds

Compound  
Numbers:  
Registry  
Numbers:

02[M3]:1784U

Unlinked

0123U 1066U 1713U 1784U

Registry Numbers:

Related  
Accessions:

Accession Number	Type	Derwent Update	Derwent Title
C1999-018571	C		
N1999-045778	N		
2 items found			

Title Terms:

CATALYST REDUCE NITROGEN UREA ENGINE EXHAUST GAS CONTAIN  
OXYGEN HYDROLYSIS CATALYST COATING CATALYST REDUCE INSTEAD  
REDUCE CATALYST INCREASE EFFECT TEMPERATURE RANGE THERMAL  
STABILISED

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<b>Derwent Searches:</b>	Boolean   Accession/Number   Advanced
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